M/027/007

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
HOUSE RANGE RESOURCE AREA
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P.O. Box 778
Fillmore, Utah 84631

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UT-056-07P-A
UT054

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DEC 27 1991
DIVISION OF OIL GAS & MINING

December 24, 1991

Mr. Edward B. King
President
Jumbo Mining Company
6305 Fern Spring Cove
Austin, Texas 78730

Dear Mr. King:

RE: Amendment Review, Mine Plan of Operations, UT-056-07P, New Heap Leach Pad H-10, Drum Mine, Millard County, Utah

Thank you for your submittal received by this office on September 17, 1991, containing supplemental information for your plan amendment of March 29, 1991. We apologize for any delays that occurred in the processing of your plan amendment. After evaluation of your submittal we have found the following deficiencies, which are listed below and give reference to our April 17, 1991 correspondence.

1. Our preliminary analysis of your water balance projection indicates the current process ponds are inadequate to serve the new heap. This conclusion is based on the following information.

In the CBC Enviro Engineering Report Feasibility Analysis, Drum Mine, H-10 Heap Leach Pad, Millard County, Utah; pg.14, it is stated "Given a 24-hour duration, 100-year return period storm event, the runoff detention and storage facilities surrounding the proposed H-10 heap leach pad must be designed for a minimum capacity of 4.4 million gallons." The capacities given for the pregnant and barren ponds in the Plan of Operations, Drum Mine, Millard County, Utah, (1983), 5.3.3, pg. 12, are 2.1 million gallons each, which is equal to a total of 4.2 million gallons.

According to policy, "At a minimum cyanide operations will be designed to contain maximum operating water balance plus a 100-year, 24-hour storm event. (In some situations a strong storm event may be required.) This calculation includes snow melt and complete pad drain down. A detailed water balance projection is required for all cyanide mining operations." The CBC Enviro Engineering figure appears to represent the daily operating water balance plus a 100-year, 24-hour storm event and does not include snow melt and complete pad drain down. We require clarification on this matter, along with addition data sufficient to complete the water balance projection.

2. Your liner design, as proposed below, is adequate. The liner design includes five components, it is described from top to bottom as follows:

A. Primary liner consisting of a 30 mil thickness PVC flexible membrane. (Liner material shall be seamed in the field according to requirements of the manufacturer. Field seams shall be tested as specified by the Authorized Officer and/or the State of Utah, Division of Water Quality.)

B. Two six-inch lifts of compacted clay with permeability of 10^{-7} centimeters/second or less. (Material for clay shall contain less than 35 per cent of material classified as gravel by the Unified Soil Classification system with a maximum particle size of one (1) inch.)

C. A geofabric to separate the compacted clay from the underlying leak detection media.

D. Four inches of leak detection media with permeability of 10^{-2} or more.

E. Six inches of subgrade material with a permeability of 10^{-6} centimeters/second or less.

In addition to specifications and engineering data on the proposed liner design, you were previously notified that you must include a description of the construction practices that will be followed to ensure the liner will be installed so it will perform to the specifications identified. This description of construction practices was omitted from your submittal, please include this in future correspondence.

Specifications of minimum requirements for leach pads need to be incorporated into your submittal, these are given in the Bureau of Land Management's Draft Cyanide Management Plan for the State of Utah.

3. The leak detection system as proposed may be adequate, confirmation of this will be given after further consultation with other regulatory agencies.

4. The spill contingency plan as proposed is inadequate. Items that need to be addressed are:

A. Agencies to notify.

(1) An operator must report a spill of sodium cyanide (NaCN) of 10 pounds or more. The Community Right-to-Know Act of 1986 requires an operator to take the

following steps in Utah:

a. Contact the State Emergency Response Commission (SERC).

b. Contact the Local Emergency Planning District (LEPD) associated where the spill is located.

c. Contact the National Response Center.

(2) You would also need to contact BLM's authorized officer and the Division of Water Pollution Control by phone within 24 hours of the spill. Within seven days of the event a written report must be submitted to the Division of Water Pollution Control. Hazardous Chemical Inventory forms are submitted by the operator to the Local Emergency Planning District, the State Emergency Response Commission, and the local fire department.

B. Containment procedures and facilities.

C. Available equipment lists and location.

D. Location of sensitive areas (domestic water supplies, fisheries, etc.).

E. Neutralization/treatment procedures and onsite reagent inventory requirements.

F. Monitoring actions.

G. Public notification.

H. Documentation and reporting.

5. Your neutralization plan as proposed is inadequate, it needs to conform to the following criteria:

A. Spent ore heaps will be neutralized to a sustained level of <0.22 mg/l WAD(weak acid dissociable) cyanide in the heap effluent. The pH levels must be between 6.0 and 9.0.

B. Tailings will be dewatered. Effluent derived from dewatering during consolidation will be detoxified to a sustained level of <0.22 mg/l WAD cyanide. The pH levels must be between 6.0 and 9.0.

C. Tailings will be detoxified to a sustained level of <0.22 mg/l WAD cyanide. The pH levels must be between 6.5 and 7.5.

Measurements are to be made at a point(s) where the heap discharge waters could/would enter the adjacent environment. Metal levels and other constituents, must meet federal maximum contaminant levels or applicable State requirements.

As previously requested, we also need for you to identify what practices you will follow to identify and dispose of any heavy metals or other hazardous wastes that might be generated during the operation of the proposed facility.

6. Your monitoring plan as proposed is inadequate. The purpose of the monitoring program is to; demonstrate compliance with the regulatory requirements; identify potential problems as early as possible; and to direct remedial action should a problem be detected. The monitoring plan needs to include the following items:

A. Groundwater monitoring well locations relative to facility locations and hydrologic conditions.

B. Groundwater monitoring well completion methods and monitored zone relative to facility locations and hydrologic conditions.

C. Surface water monitoring site locations relative to facility locations and hydrologic conditions (at a minimum, two up-gradient locations and two down-gradient locations).

D. Identification and monitoring plans for any domestic or developed water supply near the area of operations.

E. A schedule for water quality monitoring which includes; sampling frequency; parameters to be analyzed, i.e. heavy metals and other constituents which may pose a problem; operator conducted analysis versus independent lab analysis; quality control procedures; reporting schedule; threshold levels for remedial action.

F. A sampling schedule with analytical parameters for soils in the land application area. This would be designed to monitor metals loading and remaining attenuating capacity.

We will take no further action on your submittal until we have received the above information. We have attached a copy of the Bureau of Land Management's Draft Cyanide Management Plan for the State of Utah to assist you with the completion of your amendment.

Should you have any questions regarding this letter, please contact Rody Cox at (801) 743-7405.

Sincerely,

Rex Rowley
Area Manager

Attachment: BLM Draft Cyanide Management Plan

cc: Dave Hartshorn, w/ Attachment
Michael Jackson, RDO
D. Wayne Hedberg, UDOGM
Mark Novak, DWQ

RCox:mfr